



Part 145

Approval of Maintenance Organizations or Repair Stations

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PART 145

Approval of Maintenance Organizations or Repair Stations

This Part prescribes the requirements for issuing approvals to national organizations for the maintenance of aircraft and aircraft components and prescribes the general operating rules for approved maintenance organizations. The approval, when granted, will apply to the whole organization headed by the accountable manager. Foreign organizations may only be granted approval if the authority is satisfied that there is a need for such approval to maintain aircraft/aircraft components and when in compliance with this Part.

145.1 Definitions and abbreviations

"**AMO**" means approved maintenance organization.

"**Accountable manager**" means the manager who has corporate authority for ensuring that all maintenance required by the aircraft operator can be financed and carried out to the standard required by the ECAA. The accountable manager, to cover the period of his absence, may delegate in writing another person in the organization acceptable to the ECAA. Such person then becomes the accountable manager for the purpose of this Part.

"**Maintenance**" means any one or combination of overhaul, repair, inspection, replacement, modification or defect rectification of an aircraft/aircraft component.

"**Certifying staff**," means those personnel who are authorized by the AMO in accordance with a procedure acceptable to the ECAA to certify aircraft or aircraft components for release to service.

"**Authorization board**" means a board of approved examiners in an AMO (may be inspectors, instructors or maintenance staff trained for type and have 5 years of experience on it and familiar with AMO procedures) delegated from ECAA to issue internal authorizations for qualified certifying staff.

"**Accreditation bodies**" there are many accreditation bodies that provide third-party laboratory accreditation,

"**ILAC** ": The International Laboratory Accreditation Cooperation

Accredited Laboratory: means a laboratory which is accredited by an accreditation body

145.3 General

- (a) No aircraft when used for commercial air transport may fly unless a maintenance release to service has been issued by an organization for maintenance carried out on the aircraft or an aircraft component intended for fitment to such an aircraft.
- (b) No organization may certify for release to service an aircraft used for commercial air transport unless approved or accepted in accordance with this Part. No organization may maintain such an aircraft unless either approved in accordance with this Part or working under the quality system of an appropriately AMO.
- (c) No organization may certify for release to service an aircraft component intended for fitment to an aircraft used for commercial air transport unless approved or accepted in accordance with this Part. No organization may maintain such an aircraft component unless either approved in accordance with this Part or working under the quality system of an appropriately AMO.
- (d) A maintenance organization approval may be granted for maintenance activity varying from that for an aircraft component to that for a complete aircraft or any combination thereof.

145.5 Applicability

- (a) This Part is applicable to the following:
 - (1) Organizations that carry out base maintenance and certify release to service or maintenance release of aircraft above 5700 kg maximum certificated takeoff weight;
 - (2) Organizations that carry out line maintenance and certify release to service or maintenance release of aircraft above 5700 kg maximum certificated take off weight;
 - (3) Organizations that carry out maintenance and certify release to service of engines;

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- (4) Organizations that carry out maintenance and certify release to service of aircraft components (other than complete engines), auxiliary power units and specialized services; and
 - (5) Organizations that carry out maintenance and certify release to service or maintenance release of aircraft of maximum certificated takeoff weight of 5700 kg or less and/or helicopters of any weight.
- (b) [Reserved]

145.7 Application and issue

- (a) An application for maintenance organization approval or for the amendment of an existing maintenance organization approval shall be made on a form and in a manner acceptable to the ECAA, and completed by the accountable manager or his/her nominee if any, and submitted with three copies of The Maintenance Organization's Procedures Manual (MOPM) / the Maintenance Organization's Exposition (MOE) or amendment thereto, and duplicate copies of:
 - (1) Safety management system Manual;
 - (2) A list of the maintenance functions to be performed for it, under contract, by another agency under appendix A; and
 - (3) In the case of an applicant for a propeller rating (class 2) or any accessory rating (class 1, 2, or 3), a list, by type or make, as applicable, of the propeller or accessory for which he seeks approval.
- (b) An applicant who meets the requirements of this Part and has paid all the prescribed charges is entitled to a maintenance organization approval. The approval document shall contain at least the organization's name, location; date of issue period of validity; and terms of approval.
- (c) From January 2020, an applicant who meets the requirements of Appendix (C) of this Part and has paid all the prescribed charges is entitled to a maintenance organization approval under Part 145 Appendix C. The approval document shall contain at least the organization's name, location; date of issue period of validity; and terms of approval
- (d) A domestic AMO certificate and or rating expires at the end of 12 months from the date of issue, unless it is sooner surrendered, suspended, or revoked. However if the AMO continues to comply with the requirements of this Part, and applies for renewal before expiration of such certificate and/or rating, its certificate may be renewed for another 12 months.
- (e) A foreign AMO certificate and/or rating expires at the end of 12 months from the date of issue (unless it is sooner surrendered, suspended, or revoked). On condition that the corresponding certificate and ratings issued by the foreign civil aviation authority, if any remain valid throughout the period of validity of the Egyptian certificate and ratings, otherwise it will be considered automatically suspended.
- (f) The holder of a certificate that expired or is surrendered, suspended, or revoked, shall return it to the ECAA.

145.9 Extent of approval

The issue of an approval certificate to the organization indicates the grant of approval by the ECAA. The approval certificate will specify the extent of approval. The approved maintenance organization's exposition must specify the scope of work deemed to constitute the approval.

145.11 Facility requirements

- (a) Facilities must be provided appropriate for all planned work, ensuring a particular, protection from the weather elements. Specialized workshops and bays must be segregated as appropriate, to ensure that environmental and work area contamination is unlikely to occur:
 - (1) For base maintenance of aircraft, this means that aircraft hangars shall be both available and large enough to accommodate aircraft on planned base maintenance. Where the hangar is not owned by the organization, it may be necessary to establish proof of tenancy. In addition, sufficiency of hangar space to carry out planned base maintenance will need to be demonstrated by the preparation of a projected aircraft hangar visit plan relative to the maintenance. For aircraft component maintenance, this means that aircraft component

- workshops shall be large enough to accommodate the components on planned maintenance;
- (2) Protection from the weather elements relates to the normal prevailing local weather elements that are expected throughout any twelve-month period. Aircraft hangar and aircraft component workshop structures shall be to a standard that prevents the ingress of rain, hail, ice, snow, wind and dust etc. Aircraft hangar and aircraft component workshop floors shall be sealed to minimize dust generation; and
 - (3) For line maintenance of aircraft, hangars are not essential but it is recommended that access to hangar accommodation be demonstrated for usage during inclement weather for minor scheduled work and lengthy defect rectification.
- (b) Office accommodation must be provided appropriate for the management of the sub-paragraph (a) planned work including in particular, the management of quality, planning and technical records.
- (1) Office accommodation in this case means office accommodation such that the incumbents, whether they be management, planning, technical records, quality or certifying staff, can carry out their designated tasks in a manner that contributes to good aircraft maintenance standards. In addition, aircraft maintenance staff shall be provided with an area where they may study maintenance instructions and complete maintenance records in a proper manner; and
 - (2) It is acceptable to combine any or all of the above requirements into one office subject to the staff having sufficient room to carry out assigned tasks.
- (c) The working environment must be appropriate for the task carried out and in particular special requirements observed. Unless otherwise dictated by the particular task environment, the working environment of personnel shall not be impaired:
- (1) Hangars used to house aircraft together with office accommodation shall be such as to ensure the working environment permits personnel to carry out tasks in an effective manner;
 - (2) Temperatures shall be maintained such that personnel can carry out required tasks without undue discomfort;
 - (3) Dust and any other airborne contamination shall be kept to a minimum and not be permitted to reach a level in the work task area where visible aircraft/component surface contamination is evident;
 - (4) Lighting shall be such as to ensure each inspection and maintenance task can be carried out;
 - (5) Noise levels shall not be permitted to rise to the point of distracting personnel from carrying out inspection tasks. Where it is impractical to control the noise source, such personnel shall be provided with the necessary personal equipment to stop excessive noise causing distraction during inspection tasks;
 - (6) Where a particular maintenance task requires the application of specific environmental conditions different to the foregoing, then such conditions shall be observed. Specific conditions are identified in the approved maintenance instructions;
 - (7) The working environment for line maintenance shall be such that the particular maintenance or inspection task can be carried out without undue distraction. It therefore follows that where the working environment deteriorates to an unacceptable level in respect of temperature, moisture, hail, ice, snow, wind, light, dust/other airborne contamination, the particular maintenance or inspection tasks shall be suspended until satisfactory conditions are re-established; and
 - (8) For both base and line maintenance where dust/other airborne contamination results in visible surface contamination, all susceptible systems shall be sealed until acceptable conditions are re-established.
- (d) Storage facilities must be provided for parts, equipment, tools and material. Storage conditions must be such as to provide security for serviceable parts, segregation of serviceable from unserviceable parts, and prevent deterioration of and damage to stored items:
- (1) This means that secure storage facilities are required for serviceable aircraft components, whereas unserviceable aircraft components, material, tooling and

- equipment simply need be separately stored. It is however recommended that separate and secure storage facilities be provided for unserviceable components, material, equipment and tooling;
- (2) Storage facilities for serviceable aircraft components shall be clean, well ventilated and maintained at a suitable dry temperature Manufacturers and standards recommendations shall be followed for specific aircraft components;
 - (3) Storage racks shall be strong enough to hold aircraft components and provide sufficient support for large aircraft components such that the component is not distorted during storage;
 - (4) All aircraft components, wherever practicable, shall remain packaged in protective material to minimize damage and corrosion during storage; and
 - (5) All aircraft components must be conditioned tagged.
- (e) The applicant for an AMO with ratings other than specified in 145.49 must comply with the following items:
- (1) The applicant shall provide suitable:
 - (i) Housing for his necessary equipment and material;
 - (ii) Space for the work for which he seeks a rating;
 - (iii) Facilities for properly storing, segregating and protecting materials, parts and supplies; and
 - (iv) Facilities for properly protecting parts and subassemblies during disassembly, cleaning, inspection, repair, alteration, and assembly; so that work being done is protected from weather elements, dust, and heat; workers are protected so that the work will not be impaired by their physical efficiency; and maintenance operations have efficient and proper facilities.
 - (2) The applicant must provide suitable shop space where machine tools and equipment are kept and where the largest amount of bench work is done. Machines and equipment must be segregated whenever:
 - (i) Machine or woodwork is done so near an assembly area that chips or material might inadvertently fall into assembled or partially assembled work;
 - (ii) Unpartitioned parts cleaning units are near other operations;
 - (iii) Fabric work is done in an area where there are oils and greases;
 - (iv) Painting or spraying is done in an area so arranged that paint or paint dust can fall on assembled or partially assembled work;
 - (v) Paint spraying, cleaning, or machining operations are done so near testing operations that the precision of test equipment might be affected; and
 - (vi) In any other case the ECAA determines it is necessary.
 - (3) The applicant must provide suitable assembly space in an enclosed structure where the largest amount of assembly work is done. The assembly space must be large enough for the largest item to be worked on under the rating he seeks and must meet the requirements of Part 121 certificate holder;
 - (4) The applicant must store and protect parts being assembled or disassembled, or awaiting assembly or disassembly, to eliminate the possibility of damage to them;
 - (5) The applicant must provide suitable ventilation for his shop, assembly, and storage areas so that the physical efficiency of his workers is not impaired; and
 - (6) The applicant must control the temperature of the shop and assembly area so that the quality of the work is not impaired. Whenever special maintenance operations are being performed, such as fabric work or painting, the temperature and humidity control must be adequate to insure the airworthiness of the article being maintained.
- (f) Special housing and facility requirements:
- (1) An applicant for an AMO certificate and rating, or for an additional rating, for airframes, power plant, propellers, instruments, accessories, or radio must meet the requirements of items (1) to (5) of this paragraph;
 - (2) An applicant for an airframe rating must provide suitable permanent housing for at least one of the heaviest aircraft within the weight class of the rating he seeks. If the location of the line maintenance station is such that climatic conditions allow work to be done outside, permanent work docks may be used, if they meet the requirements of this Part;

- (3) An applicant for either a powerplant or accessory rating must provide suitable trays, racks, or stands for segregating complete engine or accessory assemblies from each other during assembly or disassembly. He must provide covers to protect parts awaiting assembly or during assembly to prevent dust or other foreign objects from entering in or falling on those parts;
- (4) An applicant for a propeller rating must provide suitable stands, racks, or other fixtures for the proper storage of propellers after being worked on;
- (5) An applicant for a radio rating must provide suitable storage facilities to assure the protection of parts and units that might deteriorate from dampness and moisture; and
- (6) An applicant for an instrument rating must provide a reasonably dust free shop if the shop allocated to final assembly is not air conditioned. Shop and assembly areas must be kept clean at all times to reduce the possibility of dust or other foreign objects getting into instrument assemblies.

145.13 Personnel requirements

- (a) A senior person or group of persons acceptable to the authority, whose responsibilities include ensuring that the AMO is in compliance with the requirements of this Part, must be nominated. Such person(s) must ultimately be directly responsible to the accountable manager who must be acceptable to the authority:
 - (1) The person or persons nominated shall represent the maintenance management structure of the organization and be responsible for all the functions specified in this Part. It therefore follows that, dependent upon the size of the organization, the functions may be subdivided under individual managers (and in fact may be further subdivided) or combined in any number of ways;
 - (2) In essence, however, the organization shall have, dependent upon the extent of approval a quality manager, a base maintenance manager, a line maintenance manager and a workshop manager all of whom shall report to the accountable manager. The smallest AMO consists at least of one responsible for maintenance and another responsible for quality control;
 - (3) The accountable manager is responsible for ensuring that all necessary resources are available to accomplish maintenance in accordance with this Part to support the organization's approval;
 - (4) The quality manager is responsible for monitoring the organization's compliance with this Part and requesting remedial action as necessary by the base maintenance manager/line maintenance manager/workshop manager or the accountable manager as appropriate;
 - (5) The base maintenance manager is responsible for ensuring that all maintenance required to be carried out in the hangar plus any defect rectification carried out during base maintenance, is carried out to the design and quality standards specified in this Part. The base maintenance manager is also responsible for any corrective action resulting from the quality compliance monitoring of this Part;
 - (6) The line maintenance manager is responsible for ensuring that all maintenance required to be carried out on the line including line defect rectification is carried out to the standards specified in this Part, and also responsible for any corrective action resulting from the quality compliance monitoring of this Part;
 - (7) The workshop manager is responsible for ensuring that all work on aircraft components is carried out to the standards specified in this Part, and also responsible for any corrective action resulting from the quality compliance monitoring of this Part;
 - (8) Safety manager is responsible for safety management system implementation in AMO.
 - (9) The organization may adopt any title for the foregoing managerial positions but shall identify to the ECAA the titles and persons chosen to carry out these functions;
 - (10) Where an organization chooses to appoint managers for all or any combination of the identified functions of this Part because of the size of the undertaking it is necessary that these managers report ultimately to the accountable manager; and;
 - (11) **Quality manager requirement:**

To serve as quality manager : shall have successfully achieved the training requirements appropriate to AMO scope of work and to hold a valid maintenance LWTR (as applicable).

- (i) He shall be qualified (trained) in quality system.
- (ii) He shall have 5 years experience in civil aviation activities including at least 2 years in quality system.

(12) Maintenance manager (s) requirement:

To serve as maintenance manager (s) under this part a person shall:

- (i) Hold an aircraft /aircraft component / aircraft shop maintenance license without type rating and have successfully achieved the training requirements for a type rating on at least one of the aircraft type/component (according to company capability list) ;
- (ii) Have 3 years experience within the past 6 years in one or a combination of the following:
 - (A) Maintaining or supervising the maintenance of aircraft/aircraft component , experience in maintaining the same category and class of aircraft as the certificate holder uses; or
 - (B) Repairing aircraft in a certificated airframe repair station that is rated to maintain aircraft in the same category and category and class of aircraft (according to company capability list).
 - (C) Repairing aircraft component in a certificated repair station/ shop that is rated to maintain aircraft component in the same category and category and class of aircraft (according to company capability list).

(13) Safety manager requirement: To serve as Safety manager under this Part a Person shall comply with the requirement of ECAR Part 19.

(14) A certificate holder may request a deviation to employ a person who does not meet the appropriate airman, managerial, or supervisory experience requirements of this section if the ECAA finds that the person has comparable experience, and can effectively perform the functions associated with the position in accordance with the Egyptian Civil Aviation Regulations and the procedures outlined in the certificate holder's manual. Grants of deviation under this paragraph may be granted after consideration of the size and scope of the operation and the qualifications of the intended personnel. ECAA may, at any time, terminate any grant of deviation authority issued under this paragraph.

(15) The ECAA therefore requires the managers specified above to be identified and their credentials submitted to the ECAA. To be accepted, such managers shall have relevant knowledge and satisfactory experience related to aircraft/aircraft component maintenance as appropriate.

Note: Certifying staff may report to any of the managers specified depending upon which type of control the AMO uses, so long as the quality compliance staff specified remains independent of all.

(b) The AMO must employ sufficient personnel to plan, perform, supervise and inspect the work in accordance with the approval:

- (1) The applicant must provide adequate personnel who can perform, supervise and inspect the work for which the organization is to be rated. The officials of the organization must carefully consider the justifications and abilities of their employees and shall determine the abilities of its uncertificated employees performing maintenance operations on the basis of practical tests or employment records. The organization is primarily responsible for the satisfactory work of its employees;
- (2) The number of the organization employees may vary according to the type and volume of its work. However, the applicant must have enough properly qualified employees to keep up with the volume of work in process, and may not reduce the number of its employees below that necessary to efficiently produce airworthy work; and
- (3) A possible way of compliance of the requirements of this section is to provide a man-hour plan showing that the organization has sufficient man-hours for the maintenance work load that is intended to be carried out.
 - (i) The maintenance man-hour plan should take into account any maintenance carried out on aircraft / aircraft components from part time staff and should

- also take into account all work carried out outside the scope of the Part-145 approval.
- (ii) Maintenance work load includes all necessary work such as, but not limited to, planning, maintenance record checks, production of worksheets/cards in paper or electronic form, accomplishment of maintenance, inspection and the completion of maintenance records.
 - (iii) The quality monitoring compliance function man-hours should be sufficient to meet the requirement of this Part. Where quality monitoring staff perform other functions, the time allocated to such functions needs to be taken into account in determining quality monitoring staff numbers.
 - (iv) The maintenance man-hour plan should be reviewed at least every 3 months and updated when necessary.
 - (v) Significant deviation (more than a 25% shortfall in available man-hours during a calendar month for any one of the functions) from the maintenance man-hour plan should be reported through the departmental manager to the quality manager and the accountable manager for review.
- (c) The competence of personnel involved in maintenance must be established in accordance with a procedure and to a standard acceptable to the authority.
- (1) To assist in the assessment of competence, job descriptions are recommended for each job role in the organization. Basically, the assessment shall establish that:
 - (i) Planners are able to interpret maintenance requirements into maintenance tasks, and have an appreciation that they have no authority to deviate from the aircraft maintenance program;
 - (ii) Approved personnel are able to carry out maintenance tasks to any standard specified in the maintenance instructions and will notify supervisors of mistakes requiring rectification to re-establish required maintenance standards;
 - (iii) Supervisors are able to ensure that all required maintenance tasks are carried out and where not done or where it is evident that a particular maintenance task cannot be carried out to the maintenance instructions, then such problems will be reported to and agreed by the quality control; and
 - (iv) Certifying staff are able to determine when the aircraft or aircraft component is ready to release to service and when it shall not be released to service.
 - (2) Particularly, in the case of planners, supervisors and certifying staff, knowledge of organization procedures relevant to their particular role in the organization is essential.
- (d) In addition to paragraph (c), certifying staff must meet the following qualification requirements:
- (1) Training of certifying staff must be performed in accordance with an approved curriculum and standard for training as well as pre-qualification standards for the personnel intended for training as prescribed in Part 147 concerning requirements for approval of civil aviation training activities;
 - (2) Approved examinations shall be set at the end of each training course according to standards mentioned in Part 147;
 - (3) Authorization Board committee should consist of three members nominated by the AMO including at least one ECAA inspector.
 - (4) Continuation training shall cover changes in organization procedures and changes in the standard of aircraft maintained and regulation training.
- (e) Authorizations to sign certificates of release to service are signed only by members of authorizing board. Such authorizations state the aircraft type(s) and systems for which the authorization is valid and the extent of certification authority granted. Authorizations are issued only to personnel who comply with the following requirements:
- (1) Be of age 21 or over;
 - (2) Have completed approved training course(s) complying with Part 147; and
 - (3) Be the holder of a current Egyptian maintenance license without type rating valid in the appropriate categories in accordance with Part 65. Noting that:

- (i) The ECAA approves the issue of authorizations to persons holding previous Egyptian type rated licenses considered equivalent to the category of LWTR as defined in Part 65.
- (ii) Persons holding valid authorization to issue certificates of compliance issued by the approved organization prior to the issue of this Part, may continue to exercise the privilege of certification in respect of the applicable category or categories for the aircraft type(s) concerned, provided that the authorized person remains in the employ of the approved organization which granted the authorization prior to the effective date of this Part. A maintenance engineer moving from the initial authorizing organization would need to hold the appropriate license qualification before being granted authorization by his new employer.
- (f) The applicant inspection personnel must be thoroughly familiar with all inspection methods, techniques, and equipment used in their specialization to determine the quality or airworthiness of an article being maintained or altered. In addition, they must:
 - (1) Maintain proficiency in using various inspection aids intended for that purpose;
 - (2) Have available and understand current specifications involving inspection tolerances, limitations, and procedures established by the manufacturer of the product being inspected and with other forms of inspection information such as airworthiness directives and bulletins; and
 - (3) In cases where magnetic, fluorescent, or other forms of mechanical inspection devices are to be used, be skilled in operating that equipment and be able to properly interpret defects indicated by it.
- (g) The organization shall ensure that personnel who carry out and /or control a Continued airworthiness non destructive test of aircraft structures and/or Components are appropriately qualified for the particular non-destructive test in Accordance with the European or equivalent standard recognized by the ECAA

145.15 Record of certifying staff

- (a) The AMO must maintain a record of all certifying staff which must include details of the scope of their authorization:
 - (1) The following minimum information shall be kept on record in respect of each certifying person:
 - (i) Name;
 - (ii) Date of birth;
 - (iii) Basic training;
 - (iv) Type training;
 - (v) Refreshing training;
 - (vi) Experience;
 - (vii) Qualifications relevant to the approval;
 - (viii) Scope of the authorization;
 - (ix) Date of first issue of the authorization;
 - (x) If appropriate - expire date of the authorization; and
 - (xi) Identification number of the authorization.
 - (2) The record may be kept in any format but shall be controlled by the organization's quality department. This does not mean that the quality department shall run the record system;
 - (3) Persons authorized to access the system shall be maintained at a minimum to ensure that records cannot be altered in an unauthorized manner or that such confidential records become accessible to unauthorized persons;
 - (4) The ECAA may investigate the records system for initial and continued approval or when there is a cause to doubt the competence of a particular certifying person; and
 - (5) The organization shall keep the record for at least two years after the certifying person has ceased employment with the organization or withdrawal of the authorization, whichever is the sooner. In addition, the certifying staff shall be furnished on request with a copy of their record on leaving the organization.
- (b) Certifying staff must be provided with evidence of the scope of their authorization:
 - (1) The authorization document shall be in a style that makes its scope clear to certifying staff and any authorized person that may require examining the

- document. Where codes are used to define scope, an interpretation document shall be readily available; and
- (2) Certifying staff are not required to carry the authorization document at all times but shall produce it within a reasonable time of a request from an authorized person. Authorized persons, apart from the organization's quality department or maintenance supervisors/managers, include the ECAA.
 - (c) In addition to the records mentioned in items (a) or (b) of this paragraph, the applicant shall maintain a record of:
 - (1) His supervisory personnel, including the names of the officials of the organization that are responsible for his management and the names of his technical supervisors;
 - (2) His inspection personnel, including the names of the quality manager and those inspectors who make final airworthiness determinations before releasing an article to service; and
 - (3) The organization shall change the record if any appreciable change in the duties and scope of assignment of any personnel changes.

145.17 Airworthiness data

- (a) The AMO must be in receipt of all necessary airworthiness data from the ECAA and/or appropriate authority, the aircraft/aircraft component design organization and any other approved design organization, as appropriate to support the work performed.
- Note: The ECAA may classify data from another authority or organization as mandatory and may require the AMO to hold such data. This primarily requires the aircraft base maintenance organization to hold copies of any maintenance-related document issued by the ECAA, the type certificate holder or other appropriate design organization and any referenced equipment information. Referenced means that identified by the type certificate holder.
- (b) Where the AMO produces its own airworthiness data additional to that specified in paragraph (a) such additional airworthiness data must be produced in accordance with a procedure acceptable to the ECAA. This primarily refers to maintenance data that has been transcribed from the ECAA and all type certificate holders published format into the organization's format, such as customized maintenance cards or computer base data. To obtain acceptance from the ECAA, the accuracy of transcription shall be assured.
 - (c) All airworthiness data must be kept up to date and made available to all personnel who need access to such data to perform their duties:
 - (1) To keep the data up to date a procedure shall be set up to monitor the amendment status of all data and maintain a check that all amendments are being received by being a subscriber to any document scheme;
 - (2) Data being made available to personnel maintaining aircraft means that the data shall be available in the hangar in close proximity to the aircraft being maintained; and
 - (3) Where computer systems are used, the number of computer terminals shall be sufficient in relation to the size of the work program to enable easy access, unless the computer system can produce paper copies. Where microfilm or microfiche readers/printers are used, a similar requirement is applicable.

145.19 Certification of maintenance

- (a) A certificate of release to service must be issued by appropriately authorized certifying staff when satisfied that all required maintenance of the aircraft or aircraft component has been properly carried out by the AMO in accordance with the procedures specified in the maintenance organization exposition:
 - (1) A certificate of release to service is necessary before flight at the completion of any package of maintenance scheduled by the approved maintenance program on the aircraft, whether such maintenance took place as base or line maintenance. Only in exceptional cases may scheduled maintenance be deferred and then only in accordance with procedures specified in the AMO's exposition;
 - (2) A certificate of release to service is necessary before flight, at the completion of any defect rectification, whilst the aircraft operates flight services between scheduled maintenance;

- (3) An aircraft component which has been maintained off the aircraft requires the issue of a certificate of release to service for such maintenance and another certificate of release to service in regard to being installed properly on the aircraft when such action occurs;
 - (4) The authorized release certificate/airworthiness approval tag constitutes the aircraft component certificate of release to service when an aircraft component is maintained by one approved organization for another approved organization; and
 - (5) Guidance material for the authorized release certificate/airworthiness approval tag is given in appendix B to this Part.
- (b) A certificate of release to service must contain basic details of the maintenance carried out, the date such maintenance was completed and the identity including authorization reference of the AMO and certifying staff issuing such a certificate:
- (1) The certificate of release to service shall relate to the task specified in the manufacturer's or operator's instruction or the aircraft maintenance program which itself may cross-refer to a manufacturer's/operator's instruction in a maintenance manual, service bulletin etc;
 - (2) Where such instructions include a requirement to ensure a dimension or test figures within a specific tolerance as opposed to a general tolerance, the dimension or test figure shall be recorded unless the instruction permits the use of GO/NO GO gauges. It is not normally sufficient to state that the dimension or the test figure is within tolerance;
 - (3) The date such maintenance was carried out shall include when the maintenance took place relative to any life or overhaul limitation in terms of date/flying hours/cycles/landings etc. as appropriate;
 - (4) When extensive maintenance has been carried out, it is acceptable for the certificate of release to service to summarize the maintenance so long as there is a unique cross-reference to the work-pack containing full details of maintenance carried out. Dimensional information shall be retained in the work-pack record; and
 - (5) The person issuing the release to service shall use his full signature and preferably a certification stamp except in the case where a computer release to service system is used. In this latter case the ECAA will need to be satisfied that only the particular person can electronically issue the release to service. One such method of compliance is the use of a magnetic or optical personal card in conjunction with a personal identity number known only to the individual which is keyed into the computer.

145.21 Maintenance records

- (a) The AMO must record all details of work carried out in a form acceptable to the ECAA:
- (1) Properly executed and retained records provide owners, operators and maintenance personnel with information essential in controlling unscheduled and scheduled maintenance, and troubleshooting to eliminate the need for re-inspection and rework to establish airworthiness. Only records necessary to prove all requirements have been met for issuance of the release to service including sub-contractor's release documents shall be retained;
 - (2) Some gas turbine engines are assembled from modules and a true total time in service for a total engine is not kept. When owners and operators wish to take advantage of the modular design, then total time in service and maintenance records for each module is to be maintained. The maintenance records as specified are to be kept with the module and shall show compliance with any mandatory requirements pertaining to that module;
 - (3) Reconstruction of lost or destroyed records can be done by reference to other records, which reflect the time in service, research of records maintained by repair facilities. When these things have been done and the record is still incomplete, the owner/operator may make a statement in the new record describing the loss and establishing the time in service based on the research and the best estimate of time in service. The reconstructed records shall be submitted to the ECAA for acceptance;
- Note: In such a case additional maintenance may be required.

- (4) The maintenance record can be either a paper or computer system or any combination of both;
 - (5) Paper systems shall use robust material which can withstand normal handling and filing. The record shall remain legible throughout the required retention period; and
 - (6) Computer systems may be used to control maintenance and/or record details of maintenance work carried out. Computer systems used for maintenance shall have at least one backup system which shall be updated. Each terminal is required to contain program safeguards against the ability of unauthorized personnel to alter the database.
- (b) The AMO must provide a copy of each certificate of release to service to the aircraft operator, together with a copy of any specific airworthiness data used for repairs/modifications carried out. Meanwhile the AMO shall retain the record of all maintenance.
- (c) The AMO must retain a copy of all detailed maintenance records and any associated airworthiness data for the period specified in Part 43:
- (1) The records shall be stored in a safe way with regard to fire, flood and theft;
 - (2) Computer backup discs, tapes etc. shall be stored in a different location from that containing the working discs, tapes etc; and
 - (3) Where an approved organization terminates its operation, all retained maintenance records shall be distributed to the last owner/customer of the respective aircraft or component. If it is impossible to trace the owner/customer, the maintenance records shall be stored as required by the ECAA.

145.23 Equipment, tools and material

- (a) The AMO must have the necessary equipment, tools and material to perform the approved scope of work listed in appendix A:
- (1) Once the applicant for approval has determined the intended scope of approval for consideration by the ECAA, it will be necessary to show that all tools and equipment as specified in the manufacturer's technical documentation can be made available when needed. Where the manufacturer specifies a particular tool or equipment, then that tool or equipment shall be used unless the organization has an agreed procedure specified in the organization's exposition to manufacture such tool and equipment;
 - (2) The availability of equipment and tools means permanent availability except in the case of any tool or equipment that is so rarely needed that its permanent availability is not necessary;
 - (3) An organization approved for base maintenance shall have sufficient aircraft access equipment and inspection platforms/docking such that the aircraft may be properly inspected;
 - (4) The necessary material to perform the scope of work means readily available raw material and aircraft components in accordance with the manufacturer's recommendations unless the organization has an established spares provisioning procedures; and
 - (5) The equipment and materials required for the various ratings must be located on the premises, and under the full control of the AMO, unless they are used for a function that the AMO is authorized to obtain from external sources, in such case the AMO shall determine the airworthiness of the article involved.
- (b) Where necessary, tools, equipment and particular test equipment must be controlled and calibrated to standards acceptable to the ECAA at a frequency to ensure serviceability and accuracy. Records of such calibrations and the standard used must be kept by the AMO:
- (1) Tools and test equipment, are that tooling and equipment necessary to measure/calibrate or test aircraft/ aircraft system/aircraft component to an approved standard;
 - (2) The control of these tools and equipment requires that the organization has a procedure to inspect/service and, where appropriate, calibrate such items on a regular basis and indicate to users that the item is within any inspection or service or calibration time-limit. A clear system of labeling all tooling and test equipment is therefore necessary giving information on when the next inspection or service or calibration is due and if the item is unserviceable for

- any reason where it may not be obvious. A register shall be maintained for all precision tooling and equipment together with a record of calibrations and standards used; and
- (3) Inspection, service or calibration on a regular basis shall be in accordance with the equipment manufacturer's instructions except where the organization can show by results that a different time period is appropriate in a particular case.
 - (4) From, 1st Jan 2017 ECAA shall accept only "Accredited Laboratory" which is accredited by an "Accreditation body" which is signatory of the Elector any other similar international organization.
- (c) An AMO may contract maintenance of components of a type-certificated product to a non-certificated source identified in the AMO's exposition manual provided:
- (1) The AMO is the manufacturer who originally manufactured the product for which it holds an Egyptian type certificate;
 - (2) The contracted component is included as part of the type certificated product;
 - (3) The component maintenance is done by the original component manufacturer or its manufacturing licensee; and
 - (4) Before such a component is returned to service, the AMO ensures that it is being returned to service in accordance with the AMO's quality control system as approved by the ECAA and set forth in the AMO's exposition manual.

145.27 Reporting of unairworthy conditions

- (a) Each certificated domestic repair station shall report to the ECAA within 72 hours after it discovers any serious defect in, or other recurring unairworthy condition of, an aircraft, power plant, or propeller, or any component of any of them. The report shall, describe the defect or malfunction completely without withholding any pertinent information.
- (b) In any case where the filing of a report under paragraph (a) of this section might prejudice the repair station, it shall refer the matter to the ECAA for a determination as to whether it must be reported. If the defect or malfunction could result in an imminent hazard to flight, the repair station shall use the most expeditious method it can to inform the ECAA.
- (c) The holder of a domestic repair station certificate that is also the holder of a Part 121 certificate, a type certificate (including a supplemental type certificate), a parts manufacturer approval (PMA), or a TSO authorization, or that is the licensee of a type certificate, need not report a failure, malfunction, or defect under this section if the failure, malfunction, or defect has been reported by it, under Parts 121 or 21 and in accordance with Part 39.

145.29 Maintenance Organization's Procedures Manual (MOPM)

- (a) The maintenance organization's procedures manual (MOPM) is a document which provides information about the organizational structure, management responsibilities, type of work performed, maintenance procedures and the quality assurance or inspection systems to be followed by the maintenance organization.
- (b) The MOPM shall provide clear guidance to personnel on how the work is to be performed under the approval issued by the ECAA. The MOPM shall also explain how personnel are managed, and describe personnel responsibilities and how compliance with the relevant continuing airworthiness requirements is achieved. The manual shall also include a statement of the organization's policies and objectives.
- (c) Both the ECAA and maintenance organization shall consider the MOPM as an integral part of the approval process of the organization. The MOPM shall be carefully reviewed against the relevant requirements of the Egypt national requirements. Subsequent amendments to the MOPM are required to be sent to organizations and persons the manual has been issued to, including the ECAA. The ECAA shall review the amendments and resolve any concerns with the maintenance organization at the earliest opportunity.
- (d) If the maintenance organization is also the operator, the maintenance organization's procedures manual and the air operator's MCM may be combined.
- (e) In the case of large organizations, it may be advantageous for the manual to be available to users electronically via computer. If this method is chosen, revision and control procedures are necessary to ensure printed copies are updated. A computer

- security system with authorized access to certain individuals is necessary to ensure manual information is updated properly and manuals are not erroneously edited or revised. The information made electronically available to users shall be in the read-only format.
- (f) Another option for large organizations is for the manual to be divided into two or more volumes. The first volume would contain the essential requirements for management of the approval and compliance with the appropriate airworthiness requirements, including the control of the contents of the other volumes.
- (g) The maintenance organization shall provide for the use and guidance of maintenance personnel concerned a procedures manual which may be issued in separate parts containing the following information:
- (1) a general description of the scope of work authorized under the organization's terms of approval;
 - (2) a description of the organization's procedures and quality or inspection system in accordance with 145.31;
 - (3) a general description of the organization's facilities;
 - (4) names and duties of the person or persons required by 145.13;
 - (5) a description of the procedures used to establish the competence of maintenance personnel as required by 145.13;
 - (6) a description of the method used for the completion and retention of the maintenance records required by 145.21;
 - (7) a description of the procedures for preparing the maintenance release and the circumstances under which the release is to be signed;
 - (8) the personnel authorized to sign the maintenance release and the scope of their authorization;
 - (9) a description, when applicable, of the additional procedures for complying with an operator's maintenance procedures and requirements;
 - (10) a description of the procedures for complying with the following service information reporting requirements:
 - (i) The ECAA ensure that, in respect of aero planes over 5700 kg and helicopters over 3175 kg maximum certificated take-off mass, there exists a system whereby information on faults, malfunctions, defects and other occurrences that cause or might cause adverse effects on the continuing airworthiness of the aircraft is transmitted to the organization responsible for the type design of that aircraft. Where a continuing airworthiness safety issue is associated with a modification, The ECAA shall ensure that there exists a system whereby the above information is transmitted to the organization responsible for the design of the modification; and
 - (ii) Egypt shall establish, in respect of aeroplanes over 5700 kg and helicopters over 3175 kg maximum certificated take-off mass, the type of service information that is to be reported to its airworthiness authority by operators, organizations responsible for type design and maintenance organizations. Procedures for reporting this information shall also be established; and
 - (11) A description of the procedure for receiving, assessing, amending and distributing within the maintenance organization all necessary airworthiness data from the type certificate holder or type design organization.
- (h) Notwithstanding the above requirements, consideration shall be given to including the following in the procedures manual:
- (1) Management
 - (i) A statement signed by the accountable executive confirming that the manual defines the organization's procedures and associated personnel responsibilities and will be complied with at all times;
 - (ii) An organization chart showing the associated chains of responsibility of the persons nominated in accordance with item (g) 4) above;
 - (iii) Notification procedures to the ECAA regarding changes to the organization's activities, approval, location and personnel;
 - (iv) Liaison or contractual arrangements with other organizations which provide services associated with the approval; and
 - (v) Amendment procedures for the manual.
 - (2) Maintenance procedures

- (i) Supplier evaluation procedure;
 - (ii) Acceptance/inspection of aircraft components and material from outside contractors;
 - (iii) Storage, labeling/tagging and release of aircraft components and material to aircraft maintenance;
 - (iv) Acceptance of tools and equipment;
 - (v) Calibration of tools and equipment;
 - (vi) Use of tools and equipment by personnel (including alternate tools);
 - (vii) Cleanliness standards of maintenance facilities;
 - (viii) Maintenance instructions and relationship to aircraft/aircraft component manufacturers' service information including updating and availability to personnel;
 - (ix) Repair procedure;
 - (x) Procedures for compliance with an operator's aircraft maintenance programme;
 - (xi) MCAI handling procedure;
 - (xii) Optional modification procedure;
 - (xiii) Maintenance documentation in use and completion of same;
 - (xiv) Technical record control;
 - (xv) Procedures for handling of defects arising during maintenance;
 - (xvi) Issue of the maintenance release required by 145.19;
 - (xvii) Records for the operator (if the organization is not an operator itself);
 - (xviii) Reporting of defects and other occurrences as required by the ECAA;
 - (xix) Return of defective aircraft components to store;
 - (xx) Control of defective components sent to contractors;
 - (xxi) Control of computer maintenance record systems;
 - (xxii) Reference to specific maintenance procedures such as engine running procedures, aircraft pressure run procedures, aircraft towing procedures and aircraft taxiing procedures;
 - (xxiii) Contracting procedures;
 - (xxiv) Human factors; and
 - (xxv) Manpower resources.
- (3) Line Maintenance procedures (when applicable)
- (i) Line maintenance control of aircraft components, tools, equipment, etc.;
 - (ii) Line maintenance procedures related to servicing/fuelling/de-icing, etc.;
 - (iii) Line maintenance control of defects and repetitive defects;
 - (iv) Line procedure for pooled parts and loan parts; and
 - (v) Line procedure for handling of defective parts removed from aircraft.
- 4) Quality system procedures
- (i) Quality audit of organization procedures;
 - (ii) Quality audit of aircraft;
 - (iii) Quality audit findings remedial action procedure;
 - (iv) The qualification and training procedures for certifying personnel issuing maintenance release;
 - (v) Records of certifying personnel;
 - (vi) The qualification and training procedures for quality audit personnel;
 - (vii) The qualification and training procedures for mechanics;
 - (viii) Exemption process control;
 - (ix) Concession control for deviation from organization's procedures;
 - (x) Qualification procedure for specialized activities, such as non-destructive testing (NDT), welding, etc.;
 - (xi) When required, control of manufacturer's working teams based at the premises of the organization, engaged in tasks which interface with activities included in the approval; and
 - (xii) Quality audit of sub-contractors (or acceptance of accreditation by third parties, e.g. use of NDT organizations approved by an Egyptian regulatory body other than the ECAA).
- (5) Examples of standard documents. Examples of standard documents used by the organization which are associated with activities undertaken under the terms and conditions of the approval, such as:
- (i) Technical record control; or

(ii) Rectification of defects.

145.31 Maintenance procedures and quality system

- (a) The AMO must establish procedures acceptable to the authority to ensure good maintenance practices and compliance with all relevant requirements of this Part such that aircraft and aircraft components may be released to service:
- (1) The maintenance procedures shall cover all aspects of carrying out the maintenance activity and in reality lay down the standards to which the maintenance organization intends to work. The aircraft/aircraft component design organization standards and aircraft operator standards must be taken into account;
 - (2) The maintenance procedures shall maintain, in current conditions, all manufacturers' service manuals, instructions, and service bulletins that relate to the articles that it maintains or alters; and
 - (3) In addition, each certificated repair station with a radio rating shall use materials that conform to approved specifications for equipment appropriate to its rating. It shall use test apparatus, shop equipment, performance standards, test methods, alterations, and calibrations that conform to the manufacturer's specifications or instructions, approved specifications, and, if not otherwise specified, to accept good practices of the aircraft radio industry.
- (b) In addition, the AMO must establish an independent quality system to monitor compliance with and adequacy of the procedures to ensure good maintenance practices and airworthy aircraft and aircraft components. Compliance monitoring must include a feedback system to the nominated person or group of persons specified by the organization, and ultimately to the accountable manager to ensure, as necessary, corrective action. Such systems must be acceptable to the ECAA:
- (1) The quality system is in fact an independent system under the control of the quality manager looking at the maintenance procedures;
 - (2) The ECAA requires the quality system to review all maintenance procedures as described in the exposition in accordance with an approved program. The quality system shall show when audits are due, when completed and establish a system of audit reports which can be seen by visiting ECAA staff on request. The audit system shall clearly establish a means by which audit reports containing observations about noncompliance or poor standards can be auctioned. The means ultimately shall lead to the accountable manager;
 - (3) The applicant must provide a satisfactory method of inspecting incoming material to insure that, before it is placed in stock for use in an aircraft or part thereof, it is in good state of preservation and is free from apparent defects or malfunctions;
 - (4) The applicant must provide a system of preliminary inspection of all articles he maintains to determine the state of preservation or defects. He shall enter the results of each inspection on an appropriate form supplied by it and keep the form with the article until it is released to service;
 - (5) The applicant must provide a system so that before working on any airframe, power plant, or part thereof that has been involved in an accident, it will be inspected thoroughly for hidden damaged parts. He shall enter the results of this inspection on the inspection form required in paragraph (4) of this section;; and
 - (6) Each AMO shall, before approving an airframe, powerplant, propeller, instrument, radio, or accessory for release to service after maintaining or altering it, have that article inspected by a qualified inspector. After performing a maintenance or alteration operation, the AMO shall certify on the maintenance or alteration record of the article that it is airworthy with respect to the work performed.

145.33 Certification of foreign repair stations

(a) General requirements:

A repair station certificate with appropriate ratings may be issued to a foreign repair station if the ECAA determines that it will be necessary for maintaining or altering Egyptian registered aircraft, aircraft engines, propellers, appliances and components, parts thereof; for use on Egyptian registered aircraft. A foreign repair station must meet the requirements for a domestic repair station certificate, except for the following:

- (1) Scope of work authorized:
 - (i) A certificated foreign repair station may, with respect to Egyptian registered aircraft, maintain or alter aircraft's airframes, power plants, propellers, or component parts thereof. However the ECAA may prescribe operations containing limitations as necessary to comply with the airworthiness requirements of this Part; and
 - (ii) A foreign approved maintenance organization may perform only the specific services and functions within the ratings and classes that are stated in its operation specifications issued by its local civil aviation authority, if any.
 - (2) Personnel:
 - (i) Each applicant for a foreign repair station certificate and rating, or for an additional rating, must provide enough personnel who are able to perform, supervise, and inspect the work for which he seeks a rating, with regard being given for its volume of work;
 - (ii) The supervisor and inspectors of each certificated foreign repair station must understand the regulations of this Part, airworthiness directives, and maintenance and service instructions of the manufacturers of the articles to be worked on. However, they do not need an airman certificate issued under this Part, along with the person performing the work of the station, and are not considered to be airmen with respect to work performed in connection with their employment by the foreign repair station;
 - (iii) In cases where the persons engaged in supervision or final inspection are not certificated under this Part or by the country in which the station is located, their qualifications are evaluated and determined by the ECAA, based on their ability to meet the requirements of paragraph (a) of this section as proved by oral or practical test; and
 - (iv) No person may be responsible for the supervision or final inspection work on an Egyptian registered aircraft in a foreign approved repair station unless he can read, write, and understand English.
 - (3) General operating rule: Each certificated foreign repair station shall comply with the operating rules of this Part except for the privileges of certificates.
- (b) Records and reports:
- (1) Each certificated foreign repair station shall maintain such records, and make such reports, with respect to Egyptian registered aircraft as the ECAA finds necessary;
 - (2) Each certificated foreign repair station shall keep a record for the maintenance and alterations it performs on Egyptian registered aircraft, in enough detail to show the make, model, identification marks and serial number of the aircraft involved, along with a description of the work performed thereon. In case of major repairs report shall be made on the form prescribed by the ECAA, and in the manner described thereof. Upon request, the station shall make all its maintenance and alteration records available to the ECAA; and
 - (3) Each certificated foreign repair station shall, within 72 hours after it discovers any serious defect or other peculiar unairworthy condition on any Egyptian registered aircraft, power plant, propeller, or any component thereof; report that defect or unairworthy condition to the ECAA.

145.35 Safety management system

An AMO holder certified under this part, shall show a complete compliance with ECAR Part 19 , by establishing a safety management system that is acceptable to the ECAA, maintaining it, and completing its implementation as per the chronology mentioned in this regulation.

145.37 Privileges of the AMO

The AMO may only carry out the following tasks as permitted by and in accordance with the AMO exposition:

- (a) Maintain any aircraft or aircraft component for which it is approved at the locations identified in the approval certificate;
- (b) Arrange for maintenance of any aircraft or aircraft component for which it is approved at another organization that is under the quality control of the approved

- maintenance organization. The AMO exposition must list these organizations. The AMO must have a procedure for sub-contract review, approval and quality control. Contracts for heavy maintenance checks, engine overhauls, structural repairs must be accepted by ECAA;
- (c) Maintain any aircraft for which it is approved at any location subject to the need for such maintenance arising only from unserviceability of the aircraft;
 - (d) Maintain any aircraft for which it is approved at a location identified as a line maintenance location capable of supporting minor maintenance and only if the AMO exposition both permits such activity and lists such locations;
 - (e) Issue certificates of release to service in respect of paragraph (a) to (d) on completion of maintenance in accordance with this Part;
 - (f) Maintain or alter any article for which it is rated at a place other than a repair station, if:
 - (1) The function would be performed in the same manner as when performed at the AMO and in accordance with this Part;
 - (2) All necessary personnel, equipment, material, and technical data is available at the place where the work is to be done; and
 - (3) The exposition manual of the AMO sets forth approved procedures governing work to be performed at a place other than the AMO.
 - (g) However, an AMO may not approve for return to service any aircraft, airframe, aircraft engine, propeller, or appliance after major repair or major modification unless the work was done in accordance with technical data approved by the ECAA, unless already approved by the type certifying authority.

145.39 Limitations on the AMO

The AMO may only maintain an aircraft or aircraft component for which it is approved when all necessary facilities, equipment, tooling, material, approved technical data and certifying staff are available.

145.41 Changes and/or renewal to the AMO

- (a) The AMO must notify the ECAA as soon as is practicable of any of the following changes, to enable the ECAA to determine continued compliance with this Part and to amend, if necessary, the approval certificate:
 - (1) The name of the organization;
 - (2) The location of the organization;
 - (3) Additional locations of the organization;
 - (4) The accountable manager;
 - (5) Any of the senior persons specified in this Part; and
 - (6) The facilities, equipment, tools, material, procedures, work scope and certifying staff that could affect the approval.
- (b) The ECAA may prescribe the conditions under which the AMO may operate during such changes unless the ECAA determines that the approval shall be suspended.
- (c) A person requesting renewal of an AMO or repair station certificate shall within 30 days before his current certificate expires, apply to the ECAA for renewal on a form and in a manner prescribed by the ECAA.

145.43 Continued validity of approval

Unless the approval has previously been surrendered, superseded, suspended, revoked or expired by virtue of exceeding any expire date that may be specified in the approval certificate, the continued validity of approval is dependent upon:

- (a) The AMO remaining in compliance with this Part.
- (b) **ECAA Inspection Authority:**
 - (1) Each person holds a certificate under this part (or applied for such certificate) shall grant unrestricted and unlimited access for ECAA inspectors to inspect his personnel, facilities, equipment, documents and records to determine:
 - (i) Eligibility to continue to hold his certificate.
 - (ii) Compliance with this ECAR part
 - (2) Failure to comply with paragraph (1) above shall be a basis to suspend, withdraw or revoke any certificate issued under this part.
- (c) The payment of the required charges prescribed by the ECAA.

145.45 Advertising

- (a) Whenever the advertising of a repair station indicates that it is a certificated repair station, it must clearly state its certificate number.
- (b) Paragraph (A) of this section applies to advertising in:
 - (1) Business letter heads;
 - (2) Billheads and statements;
 - (3) Customer estimates and inspection forms;
 - (4) Hangar and shop signs;
 - (5) Magazines, Periodicals, or trade journals; and
 - (6) Any form of promotional media.
- (c) A certificated repair station may not advertise as such except during the time that the certificate is valid.

145.47 Display of certificate

Each holder of a repair station certificate shall display the certificate and ratings at a place in the repair station that is normally accessible to the public and is not obscured. The certificate must be available for inspection by the ECAA.

145.49 Ratings

The following ratings are issued under this Part:

- (a) Airframe ratings:
 - (1) Class 1: Small aircraft of composite construction;
 - (2) Class 2: Large aircraft of composite construction;
 - (3) Class 3: Small aircraft of all-metal construction; and
 - (4) Class 4: Large aircraft of all--metal construction.
- (b) Power plant ratings:
 - (1) Class 1: Reciprocating engines of 400 horsepower or less;
 - (2) Class 2: Reciprocating engines of more than 400 horsepower; and
 - (3) Class 3: Turbine engines.
- (c) Propeller ratings:
 - (1) Class 1: All fixed pitch and ground adjustable propellers of wood, metal, or composite construction; and
 - (2) Class 2: All other propellers, by make.
- (d) Radio ratings:
 - (1) Class 1 Communication equipment: Any radio transmitting equipment or receiving equipment, or both, used in aircraft to send or receive communications in flight, regardless of carrier frequency or type of modulation used; including auxiliary and related aircraft inter phone systems, amplifiers systems, electrical or electronic inter-crew signaling devices, and similar equipment; but not including equipment used for navigation of the aircraft or as an aid to navigation equipment for measuring altitude on terrain clearance, other measuring equipment operated on radio or radar principles, or mechanical, electrical, gyroscopic, or electronic instruments that are a part of communications radio equipment.
 - (2) Class 2: Navigational equipment: Any radio system used in aircraft for enroute or approach navigation, except equipment operated on radar or pulsed radio frequency principles; but not including equipment for measuring altitude or terrain clearance or other distance equipment operated on radar or pulsed radio frequency principles.
 - (3) Class 3: Radar equipment: Any aircraft electronic system operated on radar or pulsed radio frequency principles.
- (e) Instrument ratings:
 - (1) Class 1: Mechanical: Any diaphragm, Burden, tube, aneroid, optical, or mechanically driven centrifugal instrument that is used on aircraft, including tachometers, airspeed indicators, pressure gauges, drift sights, magnetic compasses, altimeters, or similar mechanical instruments.
 - (2) Class 2: Electrical: Any self-synchronous and electrical indicating instruments and systems, including remote indicating instruments, cylinder head temperature gauges, or similar electrical instruments.
 - (3) Class 3: Gyroscopic: Any instrument or system using gyroscopic principles and motivated by air pressure or electrical energy, including automatic pilot control

- units, turn and bank indicators, directional gyros, and their parts, and flux gate and gyros and compasses.
- (4) Class 4: Electronic: Any instruments whose operation depends on electron tubes, transistors, or similar devices, including capacitance type quantity gauges, system amplifiers and engine analyzers.
- (f) Accessory ratings:
- (1) Class 1: Mechanical accessories that depend on friction, hydraulics, mechanical linkage, or pneumatic pressure for operation, including aircraft wheel brakes, mechanically driven pumps, carburetors, aircraft wheel assemblies, shock absorber struts and hydraulic servo units.
 - (2) Class 2: Electrical accessories that depend on electrical energy for their operation, and generators, including starters, voltage regulators, electric motors, electrically driven fuel pumps, magnetos or similar electrical accessories.
 - (3) Class 3: Electronic accessories that depend on the use of an electron tube, transistor, or similar device, including supercharger, temperature, air conditioning controls, or similar electronic controls.
- (g) Specialized services:
- (1) Nondestructive testing agencies (the minimum requirements for establishing nondestructive testing agencies and quality control requirements for them are mentioned in EAC 145-1).
 - (2) Welding workshops (the minimum requirements for establishing welding workshops and quality control for them are mentioned in EAC 145-2).

145.51 Limited ratings

- (a) Whenever the ECAA finds it appropriate, he may issue a limited rating to a domestic repair station that maintains or alters only a particular type of airframe, power plant, propeller, radio, instrument, or accessory, or parts thereof, or performs only specialized maintenance requiring equipment and skills not ordinarily found in regular repair stations. Such a rating may be limited to a specific model aircraft, engine, or constituent part, or to any number of parts made by a particular manufacturer.
- (b) Limited ratings are issued for:
- (1) Airframes of a particular make and model;
 - (2) Engines of a particular make and model;
 - (3) Propellers of a particular make and model;
 - (4) Instruments of a particular make and model;
 - (5) Radio equipment of a particular make and model;
 - (6) Accessories of a particular make and model;
 - (7) Landing gear components;
 - (8) Floats, by make;
 - (9) Nondestructive inspection, testing, and processing;
 - (10) Emergency equipment;
 - (11) Rotor blades, by make and model;
 - (12) Aircraft fabric work; and
 - (13) Any other purpose for which the ECAA finds the applicant's request is appropriate.
- (c) For a limited rating for specialized services, the operations specifications of the station shall contain the specification used in performing that specialized service. The specification may either be a civil or military one that is currently used by industry and approved by the ECAA or one developed by the applicant and approved by the ECAA.

145.53 Maintenance and preventive maintenance training program

- (a) Each certificate holder or person performing maintenance or preventive maintenance functions for it shall have a training program to ensure that each person (including inspection personnel) who determines the adequacy of work done is fully informed about procedures and techniques and new equipment in use and is competent to perform his duties.
- (b) The approved maintenance organization shall ensure that all maintenance personnel receive approved initial and continuation training appropriate to their assigned tasks and responsibilities. The approved training program established by the AMO shall

include training in knowledge and skills related to human performance, including co-ordination with other maintenance personnel and cockpit crew.

Note: Guidance material to design training programs to develop knowledge and skill in human performance for maintenance personnel can be found in ECATSH (Human factors training Standards), EAC 00-10 and EAC 00-11, as amended.

145.55 Maintenance and preventive maintenance personnel duty time limitations

Within Egypt, each certificate holder (or person performing maintenance or preventive maintenance functions for it) shall relieve each person performing maintenance or preventive maintenance from duty for a period of at least 24 consecutive hours during any seven consecutive days, or the equivalent thereof within any one calendar month.

145.57 Testing for prohibited drugs

Each domestic AMO:

- (a) Shall test each of its employees who performs a function listed in appendix I to Part 121 in accordance with that appendix.
- (b) May not use any contractor to perform a function listed in Appendix I to Part 121 unless that contractor tests each employee performing such a function for the certificate holder in accordance with that appendix.
- (c) Shall submit a drug testing program plan to the ECAA (specifying the procedures for all testing required by appendix I) not later than January 31, 2002. Each certificate holder shall implement its program not later than 30 days after approval of the program by the ECAA. In any case the final implementation date of this program shall not be later than March 1, 2002.
- (d) Starting from September 1, 2001, ECAA may conduct random drug testing checks.

145.59 Misuse of alcohol

For each domestic AMO the following requirements apply:

- (a) General. This section applies to employees who perform a function listed in appendix J to Part 121 for a certificate holder (covered employees). For the purpose of this section, a person who meets the definition of covered employee in appendix J to Part 121 is considered to be performing the function for the certificate holder.
- (b) Alcohol concentration. No covered employee shall report for duty or remain on duty requiring the performance of safety-sensitive functions while having an alcohol concentration of 0.04 or greater. No certificate holder having actual knowledge that an employee has an alcohol concentration of 0.04 or greater shall permit the employee to perform or continue to perform safety-sensitive functions.
- (c) On-duty use. No covered employee shall use alcohol while performing safety-sensitive functions. No certificate holder having actual knowledge that a covered employee is using alcohol while performing safety-sensitive functions shall permit the employee to perform or continue to perform safety-sensitive functions.
- (d) Pre-duty use:
 - (1) No covered employee shall perform maintenance duties within 8 hours after using alcohol. No certificate holder having actual knowledge that such an employee has used alcohol within 8 hours shall permit the employee to perform or continue to perform the specified duties.
 - (2) No covered employee shall perform safety-sensitive duties other than those specified in paragraph (d)(1) of this section within 4 hours after using alcohol. No certificate holder having actual knowledge that such an employee has used alcohol within 4 hours shall permit the employee to perform or continue to perform safety-sensitive functions.
- (e) Use following an accident. No covered employee who has actual knowledge of an accident involving an aircraft for which he or she performed a safety-sensitive function at or near the time of the accident shall use alcohol for 8 hours following the accident, unless he or she has been given a post-accident test under appendix J of Part 121, or the employer has determined that the employee's performance could not have contributed to the accident.
- (f) Refusal to submit to a required alcohol test. No covered employee shall refuse to submit to a post-accident, random, reasonable suspicion, or follow-up alcohol test required under appendix J to Part 121. No certificate holder shall permit an

employee who refuses to submit to such a test to perform or continue to perform safety-sensitive functions.

145.61 Testing for alcohol

For each domestic AMO the following requirements apply:

- (a) Each certificate holder must establish an alcohol misuse prevention program in accordance with the provisions of appendix J to Part 121.
- (b) No certificate holder shall use any person who meets the definition of covered employee in appendix J to Part 121 to perform a safety-sensitive function listed in that appendix unless such person is subject to testing for alcohol misuse in accordance with the provisions of appendix J.
- (c) Each certificate holder shall submit an alcohol misuse prevention program plan to the ECAA (specifying the procedures for all testing required by appendix J) not later than January 31, 2002. Each certificate holder shall implement its program not later than 30 days after approval of the program by the ECAA. In any case the final implementation date of this program shall not be later than March 1, 2002.
- (d) Starting from September 1, 2001, ECAA may conduct random alcoholic testing.

APPENDIX A
Scope of work for each class

Note: When an asterisk (*) is shown after any job function listed in this appendix it indicates that the applicant need not have the equipment and material on his premises for performing this job function provided he contracts that particular type work to an outside agency having such equipment and material.

145. Aa.1

An applicant for a class 1, 2, 3, or 4 airframe rating must provide equipment and material necessary for efficiently performing the following job functions:

- (a) Steel structural components:
- (1) Repair or replace steel tubes and fittings using the proper welding techniques when appropriate;
 - (2) Anticorrosion treatment of the interior and exterior of steel parts;
 - (3) Metal plating or anodizing*;
 - (4) Simple machine operations such as making bushings, bolts, etc.;
 - (5) Complex machine operations involving the use of planers, shapers, milling machines, etc.*;
 - (6) Fabricate steel fittings;
 - (7) Abrasive air blasting and chemical cleaning operations*;
 - (8) Heat treatment;
 - (9) Magnetic inspection*; and
 - (10) Repair or rebuild metal tanks*.
- (b) Wood structure:
- (1) Splice wood spars;
 - (2) Repair ribs and spars (wood);
 - (3) Fabricate wood spars*;
 - (4) Repair or replace metal ribs;
 - (5) Interior alignment of wings;
 - (6) Repair or replace plywood skin; and
 - (7) Treatment against wood decay.
- (c) Alloy skin and structural components:
- (1) Repair and replace metal skin, using power tools and equipment;
 - (2) Repair and replace alloy members and components such as tubes, channels, cowlings, fittings, attach angles, etc.;
 - (3) Alignment of components using jigs or fixtures as in the case of joining fuselage sections or other similar operations;
 - (4) Make up wooden forming blocks or dies;
 - (5) Fluorescent inspection of alloy components*; and
 - (6) Fabricate alloy members and components such as tubes, channels, cowlings, fittings, attach angles, etc.*.
- (d) Fabric covering:
- (1) Repairs to fabric surfaces; and
 - (2) Recovering and refinishing of components and entire aircraft*.
- (e) Control systems:
- (1) Renewing control cables, using swaging and splicing techniques;
 - (2) Rigging complete control system;
 - (3) Renewing or repairing all control system hinge point components such as pins, bushings, etc.; and
 - (4) Install control system units and components.
- (f) Landing gear systems:
- (1) Renew or repair all landing gear hinge point components and attachments such as bolts, bushings, fittings, etc.;
 - (2) Overhaul and repair elastic shock absorber units;
 - (3) Overhaul and repair hydraulic/pneumatic shock absorber units*;
 - (4) Overhaul and repair brake system components*;
 - (5) Conduct retraction cycle tests;
 - (6) Overhaul and repair electrical circuits;
 - (7) Overhaul and repair hydraulic system components* and
 - (8) Repair or fabricate hydraulic lines.

- (g) Electric wiring systems:
 - (1) Diagnose malfunctions;
 - (2) Repair or replace wiring;
 - (3) Installation of electrical equipment; and
 - (4) Bench-check electrical components (this check is not to be confused with the more complex functional test after overhaul).
- (h) Assembly operations:
 - (1) Assembly of airframe component parts such as landing gear, wings, controls, etc.;
 - (2) Rigging and alignment of airframe components, including the complete aircraft and control system;
 - (3) Installation of power plants;
 - (4) Installation of instruments and accessories;
 - (5) Assembly and fitting of cowling, fairings, etc.;
 - (6) Repair and assembly of plastic components such as windshields, windows, etc.;
 - (7) Jack or hoist complete aircraft;
 - (8) Conduct aircraft weight and balance operations (this function will be conducted in draft free area)*; and
 - (9) Balance control surfaces.

145. Aa.2

An applicant for any class of power plant rating must provide equipment and material necessary for efficiently performing the following job functions appropriate to the class of rating applied for:

- (a) Classes 1 and 2.
 - (1) Maintain and alter power plants, including replacement of parts:
 - (i) Chemical and mechanical cleaning;
 - (ii) Disassembly operations;
 - (iii) Replacement of valve guides and seats*;
 - (iv) Replacement of bushings, bearings, pins, inserts, etc.;
 - (v) Plating operations (copper, silver, cadmium, etc.)*;
 - (vi) Heating operations (involving the use of recommended techniques requiring controlled heating facilities);
 - (vii) Chilling or shrinking operations;
 - (viii) Removal and replacement of studs;
 - (ix) Cribbing or affixing identification information;
 - (x) Painting of power plants and components;
 - (xi) Anticorrosion treatment for parts; and
 - (xii) Replacement and repair of power plant alloy sheet metal and steel components.
 - (2) Inspect all parts, using appropriate inspection aids:
 - (i) Magnetic, fluorescent and other acceptable inspection aids*;
 - (ii) Precise determination of clearances and tolerances of all parts,
 - (iii) Inspection for alignment of connecting rods, crankshafts, impeller shafts, etc.,
 - (iv) Balancing of parts, including crankshafts, impellers, etc.*;
 - (v) Inspection of valve springs.
 - (3) Accomplish routine machine work:
 - (i) Precision grinding, honing and lapping operations (includes crankshaft, cylinder barrels, etc.)*;
 - (ii) Precision drilling, tapping, boring, milling and cutting operations*;
 - (iii) Reaming of inserts, bushings, bearings and other similar components; and
 - (iv) Prefacing of valves.
 - (4) Perform assembly operations:
 - (i) Valve and ignition timing operations;
 - (ii) Fabricate and test ignition harnesses;
 - (iii) Fabricate and test rigid and flexible fluid lines;
 - (iv) Prepare engines for long or short-term storage;
 - (v) Functional check power plant accessories (this check is not to be confused with the more complex performance test of overhaul)*;
 - (vi) Hoist engines by mechanical means;

- (vii) Install engines in aircraft*;
 - (viii) Align and adjust engine controls*; and
 - (ix) Installation of engines in aircraft and alignment and adjustment of engine mechanic or certificated repairman. Persons supervising or inspecting these functions must thoroughly understand the pertinent installation details involved.
- (5) Test overhauled power plants in compliance with manufacturers' recommendations: The test equipment will be the same as recommended by the manufacturers of the particular engines undergoing test or equivalent equipment that will accomplish the same purpose. The testing function may be performed by the repair station itself, or may be contracted to an outside agency. In either case the repair station will be responsible for the final acceptance of the tested engine.
- (b) Class 3. Functional and equipment requirements for turbine engines will be governed entirely by the recommendations of the manufacturer, including techniques, inspection methods, and test.

145. Aa.3

An applicant for any class of propeller rating must provide equipment and material necessary for efficiently performing the following job functions appropriate to the class of rating applied for:

- (a) Class 1.
- (1) Maintain and alter propellers, including installation and replacement of parts:
 - (i) Replace blade tipping;
 - (ii) Refinish wood propellers;
 - (iii) Make wood inlays;
 - (iv) Refinish plastic blades;
 - (v) Straighten bent blades within repairable tolerances;
 - (vi) Modify blade diameter and profile;
 - (vii) Polish and buff;
 - (viii) Painting operations; and
 - (ix) Remove from and reinstall on power plants.
 - (2) Inspect components, using appropriate inspection aids:
 - (i) Inspect propellers for conformity with manufacturer's drawings and specifications;
 - (ii) Inspect hubs and blades for failures and defects, using magnetic or fluorescent inspection devices*;
 - (iii) Inspect hubs and blades for failures and defects, using all visual aids, including the etching of parts; and
 - (iv) Inspect hubs for wear of splines or keyways or any other defect.
 - (3) Repair or replace components: (Not applicable to this class).
 - (4) Balance propellers:
 - (i) Test for proper track on aircraft; and
 - (ii) Test for horizontal and vertical unbalance (this test will be accomplished with the use of precision equipment).
 - (5) Test propeller pitch changing mechanisms: (Not applicable to this class).
- (b) Class 2
- (1) Maintain and alter propellers, including installation and the replacement of parts:
 - (i) All functions listed under paragraph (c)(1)(i) of this appendix when applicable to the make and model propeller for which a rating is sought;
 - (ii) Properly lubricate moving parts; and
 - (iii) Assemble complete propeller and subassemblies, using special tools when required.
 - (2) Inspect components, using appropriate inspection aids: All functions listed under paragraph (c)(1)(ii) of this appendix when applicable to the make and model propeller for which a rating is sought.
 - (3) Repair or replace component parts:
 - (i) Replace blades, hubs, or any of their components;
 - (ii) Repair or replace anti-icing devices;
 - (iii) Remove nicks or scratches from metal blades; and

- (iv) Repair or replace electrical propeller components.
- (4) Balance propellers: All functions listed under paragraph (c)(1)(iv) of this appendix when applicable to the make and model propeller for which a rating is sought.
- (5) Test propeller pitch changing mechanism:
 - (i) Test hydraulically, propellers and components;
 - (ii) Test electrically operated propellers and components; and
 - (iii) Test of constant speed devices*.

145. Aa.4

An applicant for a radio rating must provide equipment and materials as follows:

- (a) For a class 1 (Communications) radio rating, the equipment and materials necessary for efficiently performing the job functions listed in paragraph (4) and the following job functions:
 - (1) The testing and repair of headsets, speakers, and microphones.
 - (2) The measuring of radio transmitter power output.
- (b) For a class 2 (Navigation) radio rating, the equipment and materials necessary for efficiently performing the job functions listed in paragraph (4) and the following job functions:
 - (1) The testing and repair of headsets;
 - (2) The testing of speakers;
 - (3) The repair of speakers.*;
 - (4) The measuring of loop antenna sensitivity by appropriate methods;
 - (5) The determination and compensation for quadrant error in aircraft direction finder radio equipment; and
 - (6) The calibration of any radio navigational equipment, enroute and approach aids, or similar equipment, appropriate to this rating to approved performance standards.
- (c) For class 3 (Radar) radio rating, the equipment and materials necessary for efficiently performing the job functions listed in paragraph (4) and the following job functions:
 - (1) The measuring of radio transmitter power output;
 - (2) The metal plating of transmission lines, wave guides, and similar equipment in accordance with appropriate specifications.*; and
 - (3) The pressurization of appropriate radar equipment with dry air, nitrogen, or other specified gases.
- (d) For all classes of radio ratings, the equipment and materials necessary for efficiently performing the following job functions:
 - (1) Perform physical inspection of radio systems and components by visual and mechanical methods;
 - (2) Perform electrical inspection of radio systems and components by means of appropriate electrical and/or electronic test instruments;
 - (3) Check aircraft wiring, antennas, connectors, relays, and other associated radio components to detect installation faults;
 - (4) Check engine ignition systems and aircraft accessories to determine sources of electrical interference;
 - (5) Check aircraft power supplies for adequacy and proper functioning;
 - (6) Test radio instruments.*;
 - (7) Overhaul, test, and check dynamotors, inverters, and other radio electrical apparatus.*;
 - (8) Paint and refinish equipment containers.*;
 - (9) Accomplish appropriate methods of marking calibrations, or other information on radio control panels and other components, as required.*;
 - (10) Make and reproduce drawings, wiring diagrams, and other similar material required to record alterations and/or modifications to radio (photographs may be used in lieu of drawings when they will serve as an equivalent or better means of recording).*;
 - (11) Fabricate tuning shaft assemblies, brackets, cable assemblies, and other similar components used in radios or aircraft radio installations.*;
 - (12) Align tuned circuits (RF and IF);
 - (13) Install and repair aircraft antennas;

- (14) Install complete radio systems in aircraft and prepare weight and balance reports* (That phase of radio installation requiring alterations to the aircraft structure must be performed, supervised, and inspected by qualified personnel);
- (15) Measure modulation values, noise, and distortion in radios;
- (16) Measure audio and radio frequencies to appropriate tolerances and perform calibration necessary for the proper operation of radios;
- (17) Measure radio component values (inductance, capacitance, resistance, etc.);
- (18) Measure radio frequency transmission line attenuation;
- (19) Determine wave forms and phase in radios when applicable;
- (20) Determine proper aircraft radio antenna, leading and transmission line characteristics and locations for type of radio equipment to which connected;
- (21) Determine operational condition of radio equipment installed in aircraft by using appropriate portable test apparatus;
- (22) Determine proper location for radio antennas on aircraft; and
- (23) Test all types of electronic tubes, transistors, or similar devices in equipment appropriate to the rating.

145. Aa.5

An applicant for any class of instrument rating must provide equipment and material necessary for efficiently performing the following job functions, in accordance with pertinent specifications and manufacturers' recommendations, appropriate to the class of rating applied for:

(a) Class 1:

- (1) Diagnose instrument malfunctions: Diagnose malfunctioning of the following instruments:
 - (i) Rate of climb indicators;
 - (ii) Altimeters;
 - (iii) Air speed indicators;
 - (iv) Vacuum indicators;
 - (v) Oil pressure gauges;
 - (vi) Fuel pressure gauges;
 - (vii) Hydraulic pressure gauges;
 - (viii) Deicing pressure gauges;
 - (ix) Pilot/static tube;
 - (x) Direct indicating compasses;
 - (xi) Accelerometer;
 - (xii) Direct indicating tachometers;
 - (xiii) Direct reading fuel quantity gauges; and
 - (xiv) Optical (sextants, drift sights, etc.)*.
- (2) Maintain and alter instruments, including installation and replacement of parts:
 - (i) Perform these functions on instruments listed under paragraph (e)(1)(i) of this appendix; and
 - (ii) The function of installation includes fabrication of instrument panels and other installation structural components. The repair station shall be equipped to perform this function. However, it may be contracted to a competent outside agency equipped to perform the function.
- (3) Inspect, test and calibrate instruments: Perform these functions on instruments listed under paragraph (e)(1)(i) of this appendix, on and off the aircraft, when appropriate.

(b) Class 2:

- (1) Diagnose instrument malfunctions: Diagnose malfunctioning of the following instruments:
 - (i) Tachometers;
 - (ii) Synchroscope;
 - (iii) Electric temperature indicators;
 - (iv) Electric resistance type indicators;
 - (v) Moving magnet type indicators;
 - (vi) Resistance type fuel indicators;
 - (vii) Warning units (oil/fuel);
 - (viii) Selwyn systems and indicators;
 - (ix) Self-synchronous systems and indicators;

- (x) Remote indicating compasses;
 - (xi) Fuel quantity indicators;
 - (xii) Oil quantity indicators;
 - (xiii) Radio indicators;
 - (xiv) Ammeters; and
 - (xv) Voltmeters.
- (2) Maintain and alter instruments, including installation and the replacement of parts:
- (i) Perform these functions on instruments listed under paragraph (e)(2)(i) of this appendix; and
 - (ii) The function of installation includes fabrication of instrument panels and other installation structural components. The repair station shall be equipped to perform this function. However, it may be contracted to a competent outside agency equipped to perform the function.
- (3) Inspect, test and calibrate instruments: Perform these functions on instruments listed under paragraph (e)(2)(i) of this appendix, on and off the aircraft, when appropriate.
- (c) Class 3:
- (1) Diagnose instrument malfunctions: Diagnose malfunctioning of the following instruments:
 - (i) Turn and bank indicators;
 - (ii) Directional gyros;
 - (iii) Horizon gyros;
 - (iv) Auto pilot control units and components*; and
 - (v) Remote reading direction indicators*.
 - (3) Maintain and alter instruments, including installation and replacement of parts;
 - (4) Perform these functions on instruments listed under paragraph (e)(3)(i) of this appendix. The function of installation includes fabrication of instrument panels and other installation structural components. The repair station shall be equipped to perform this function. However, it may be contracted to a competent outside agency equipped to perform the function.
 - (5) Inspect, test and calibrate instruments: Perform these functions on instruments listed under paragraph (e)(3)(i) of this appendix, on and off the aircraft, when appropriate.
- (d) Class 4:
- (1) Diagnose instrument malfunctions: Diagnose malfunctioning of the following instruments:
 - (i) Capacitance type quantity gauge,
 - (ii) Other electronic instruments,
 - (iii) Engine analyzers.
 - (2) Maintain and alter instruments, including installation and replacement of parts: Perform these functions on instruments listed under paragraph (e)(4)(i) of this appendix. The function of installation includes fabrication of instrument panels and other installation structural components. The repair station shall be equipped to perform this function. However, it may be contracted to a competent outside agency equipped to perform the function.
 - (3) Inspect, test and calibrate instruments: Perform these functions on instruments listed under paragraph (e)(4)(i) of this appendix, on and off the aircraft, when appropriate.

145. Aa.6

An applicant for a Class 1, 2, or 3 accessory rating must provide equipment and material necessary for efficiently performing the following job functions, in accordance with pertinent specifications and the manufacturers' recommendations:

- (a) Diagnose accessory malfunctions;
- (b) Maintain and alter accessories, including installation and the replacement of the parts;
- (c) Inspect, test, and, where necessary, calibrate accessories.

APPENDIX B

Guidance Material for the Authorized Release Certificate/Airworthiness Approval Tag:

1-COUNTRY	2- Authorized Release Certificate Airworthiness Approval Tag		3-Certificate Ref. No.	
4 - ORGANIZATION			5- Work order/ contract	
6- Item	7- Description	8- part no.	9- Eligibility	10- quantity
11-Serial N	12- Work Status		13- Remarks	
14 - New	Parts		15 - parts used	
16 - Signed	17 - Name		18- Date	
19 -	Issued by or on behalf of the ECAA under reference:-			

Appendix C:
Approval of Maintenance Organization under adopted regulations from EU

145. Ac.1 Effectively

This appendix will be effective from January 1, 2020

145. Ac.3 Applicability

- (a) This Appendix prescribes requirements for issuing approvals to national organizations for the maintenance of aircraft and aircraft components and prescribes the general operating rules for approved maintenance organizations. The approval, when granted, will apply to the whole organization headed by the account able manager. Foreign organizations may only be granted approval if the authority is satisfied that there is a need for such approval to maintain aircraft/aircraft components and when in compliance with this appendix
- (b) Each person who applies for such approval or change must show compliance with the applicable requirements of Annex II (part 145) of EU regulation No. 1321/2014 as amended, and their guidance material except the items referred to in 145.ac.5, applicant has to comply with them rather than compliance with EU regulations

145. Ac.5 Expected differences from EU regulations

The following is a list of expected differences from Annex II (part 145) of EU regulation No. 1321/2014

- (a) 145.1 **General:** for the purpose of this appendix, Competent authority shall be ECAA
- (b) 145. A.10**Scope:** This appendix establishes the requirements to be met by an organization to qualify for the issue or renewal of an approval for the maintenance of air craft and components.
- (c) 145.A.30 Personnel Requirement: Add safety manager to required mangers
- (d) 145.A.30 **Personnel Requirements** : till the adoption of EU part(66), whenever part (66) is referred to, it will be replaced by ECAR part 65 and the categories B1, B2 & B3 are replaced by the appropriate ratings indicated in ECAR part 65
- (e) 145.A.35 **Certifying and support staff** : till the adoption of EU part(66), whenever part (66) is referred to, it will be replaced by ECAR part 65 and the categories B1, B2 & B3 are replaced by the appropriate ratings indicated in ECAR part 65
- (f) 145. A.90 Continued validity: An approval shall be issued for a period 12 months. It shall remain valid subject to.....
- (g) Others: article ECAR 145.35 is applicable also in this appendix.

Note: The above mentioned list is only for guidance but it will be finalized when this appendix becomes effective.